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# Querying Metrics from Prometheus

 2 minute read  page test

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This task shows you how to query for Istio Metrics using Prometheus. As part of this task, you will use the web-based interface for querying metric values.

The `Bookinfo` sample application is used as the example application throughout this task.

## Before you begin

- Install Istio in your cluster.
- Install the Prometheus Addon.

- Deploy the Bookinfo application.

## Querying Istio metrics

1. Verify that the `prometheus` service is running in your cluster.

In Kubernetes environments, execute the following command:

```
$ kubectl -n istio-system get svc prometheus
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
prometheus	ClusterIP	10.109.160.254	<none>	9090/TCP	4m

2. Send traffic to the mesh.

For the Bookinfo sample, visit

`http://$GATEWAY_URL/productpage` in your web browser or issue the following command:

```
$ curl "http://$GATEWAY_URL/productpage"
```



`$GATEWAY_URL` is the value set in the Bookinfo example.

### 3. Open the Prometheus UI.

In Kubernetes environments, execute the following command:

```
$ istioctl dashboard prometheus
```

Click **Graph** to the right of Prometheus in the header.

#### 4. Execute a Prometheus query.

In the “Expression” input box at the top of the web page, enter the text:

```
istio_requests_total
```

Then, click the **Execute** button.

The results will be similar to:



The screenshot shows the Prometheus web interface. At the top, there is a navigation bar with 'Prometheus', 'Alerts', 'Graph', 'Status', and 'Help'. Below this, there is a section for 'Enable query history' and a 'Try experimental React UI' link. The main area displays the query 'istio requests total' in the 'Expression' input box. The results are shown as a table with columns for 'Time' and 'Value'. The table contains one row of data. At the bottom right, there is a status bar showing 'Load time: 151ms' and 'Duration: 4.4s'.

Time	Value
2020-07-15 15:15:15.151	151

Execute

- insert metric at cursor -

Graph

Console



Moment



Element

Value

istio_requests_total{connection_security_policy="mutual_tls",destination_app="details",destination_canonical_service="details",destination_port="9080",destination_principal="spiffe://cluster.local/ns/default/sa/bookinfo-details",destination_service="details.default.svc.cluster.local",destination_service_name="details",destination_service_namespace="default",destination_version="v1",destination_workload="details-v1",destination_workload_namespace="default",instance="10.12.1.13:15090",job="envoy-stats",namespace="default",pod_name="details-v1-c5b5f496d-wsv5q",reporter="destination",request_protocol="http",response_code="200",response_flags="-",source_app="productpage",source_canonical_service="productpage",source_principal="spiffe://cluster.local/ns/default/sa/bookinfo-productpage",source_version="v1",source_workload="productpage-v1",source_workload_namespace="default"}	8
istio_requests_total{connection_security_policy="mutual_tls",destination_app="productpage",destination_canonical_service="productpage",destination_port="9080",destination_principal="spiffe://cluster.local/ns/default/sa/bookinfo-productpage",destination_service="productpage.default.svc.cluster.local",destination_service_name="productpage",destination_service_namespace="default",destination_version="v1",destination_workload="productpage-v1",destination_workload_namespace="default",instance="10.12.1.15:15090",job="envoy-stats",namespace="default",pod_name="productpage-v1-7d6cfb7d4d-rhn7f",reporter="destination",request_protocol="http",response_code="0",response_flags="DC",source_app="istio-ingressgateway",source_canonical_service="istio-ingressgateway",source_principal="spiffe://cluster.local/ns/istio-system/sa/istio-ingressgateway-service-account",source_version="unknown",source_workload="istio-ingressgateway",source_workload_namespace="istio-system"}	4
istio_requests_total{connection_security_policy="mutual_tls",destination_app="productpage",destination_canonical_service="productpage",destination_port="9080",destination_principal="spiffe://cluster.local/ns/default/sa/bookinfo-productpage",destination_service="productpage.default.svc.cluster.local",destination_service_name="productpage",destination_service_namespace="default",destination_version="v1",destination_workload="productpage-v1",destination_workload_namespace="default",instance="10.12.1.15:15090",job="envoy-stats",namespace="default",pod_name="productpage-v1-7d6cfb7d4d-rhn7f",reporter="destination",request_protocol="http",response_code="200",response_flags="-",source_app="istio-ingressgateway",source_canonical_service="istio-ingressgateway",source_principal="spiffe://cluster.local/ns/istio-system/sa/istio-ingressgateway-service-account",source_version="unknown",source_workload="istio-ingressgateway",source_workload_namespace="istio-system"}	9

## Prometheus Query Result

You can also see the query results graphically by selecting the Graph tab underneath the **Execute** button.

Execute - Insert metric at cursor 4

Graph Console

[illegible]

Remove Graph

### Auto Graphs

## Prometheus Query Result - Graphical

Other queries to try:

- Total count of all requests to the `productpage` service:

```
istio_requests_total{destination_service="productpage.default.svc.cluster.local"}
```

- Total count of all requests to `v3` of the `reviews` service:

```
istio_requests_total{destination_service="reviews.default.svc.cluster.local", destination_version="v3"}
```

This query returns the current total count of all requests to the `v3` of the `reviews` service.

- Rate of requests over the past 5 minutes to all instances of the `productpage` service:



```
rate(istio_requests_total{destination_service=~"productpage.*", response_code="200"}[5m])
```

# About the Prometheus addon

The Prometheus addon is a Prometheus server that comes preconfigured to scrape Istio endpoints to collect metrics. It provides a mechanism for persistent storage and querying of Istio metrics.

For more on querying Prometheus, please read their [querying docs](#).

# Cleanup

- Remove any `istioctl` processes that may still be running using control-C or:

```
$ killall istioctl
```

- If you are not planning to explore any follow-on tasks, refer to the [Bookinfo cleanup instructions](#) to shutdown the application.